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## 2022.11.29 Project Skunkworks Open Polymerase™ And Taq+Start™ And Power Cloning™ And Sea Vent+ TdT DNA Synthesis™ V 1.1

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Lambda Red Assemblyase™	λRed Assemblyase™	Open λRed™
Open Lambda Red™	Open TA Cloning™	T7+ RNA™, Pwo Fusion™
Psp Vent™	Tth+Start™	Pfu UTPase™
Psp+ Polymerase™	Psp(-exo)+ Polymerase™	Tth+ Polymerase™
PwoS+ Polymerase™	TthStart™	StartTth™
Start+Tth™	Start-Tth™	Tli Vent™ Polymerase™
Tli(-exo) Vent™ Polymerase™	Tli+ Polymerase™	Tli(-exo)+ Polymerase™
Tth-Start™	TthPlusStart™	TthPlus™
StartPlusTth™	TthPlusStart™	Pwo Sso7d™
T5 Cloning™	Blue Gate Cloning™	T5-Sap OnePot Cloning™
T5-Sap OnePot Assembly™	SeaVent DNA Synthesis™	SeaVent+TdT DNA Synthesis™
Sparrow DNA Synthesis™	<u>SeaVent de novo Step-wise DNA Synthesis™</u>	
ZaTdT DNA Synthase™	SeaVent+ZaTdT DNA Synthesis	
Taq+Start™ DNA Polymerase	Tth+Start™ DNA Polymerase	T5-NotI One Pot
T5-NotI Assemblyase™		

Sea Vent Polymerase™ is a native, N or C terminal tagged (purification and immunodetection) enzyme-coded *NrS-1 gene* protein 28 of phage NrS-1. The protein name for this gene is termed a “primase”. Alternate names for this polymerase are Nrs-1 Vent Primase™, Phage Vent Primase™ and Sea Vent Primase™. The Radegen Biotechnology genetic constructs for this enzyme are designed for heterologous production in *E. coli* and *P. putida*. The utility of this enzyme for PCR is none. This enzyme is in development and will be marketed for Radegen Biotechnology’s step-wise *de novo* DNA synthesis platform.

>BAN05337.1 primase [Nitratiruptor phage NrS-1]  
MIMEIPAIALSRYAQWVWKKERDTKIPYNPNNGKASSTDLAWGDIDEAQAGLVRYGANGLGFLVTK  
SDPFVFDLHDVLDENKRVKCEWARQLLKEIKSYTEISPSGDLHVVSGLPDYIKHKTDFDDGSALEV  
YESGRYMTITGEVFDGRDDIKELDLSILGEFAEHKIETKNAPVQIESATTLDDDEAIIDLKMRKGQWPDAP  
KDGDDWSSLDMSFANRLAFWCGKDIERMDRIFRQSPLMRQKWDRTAGSTYGRITLKKACDFVDSVYDPA  
LRNESDCPFEPYNEEGPRNDKEEDPLWLKYVLLTKGIEVWFDIKLEKYGIKRNNRVDYIAKSSSLQIV

FEIIGKTPKNIAVPTYIGAYEPSKPEKWEEEGIKYINLFKPTPLMKVKPVKEMPEIVKNLLLNLFDYDAK  
SMGLFINWLAFIYQYKERTGVAWIFMGKQGTGKGLLDLLKKIFEEHMSSNITDANLDSQFNPYLYNKLI  
VHLNEVSADNRKSRMLVKNRLKTWITDETLYINRKNMKEVEIKNFCNFIINSNETIPVDIEDSDRRFNVI  
ECNNVLKEQEWWTTESYQEILNNAEGFAKYLAKIKVDRSKVNEVVMSEKKKAIVETTESVLKQIAKALTD  
RDIEWFLDNGLEGVVEKNIVNDFQWEELQEAITTGVIPNKYLMIIVEQILGDSKTITWIKRNIITPYQVG  
ETTVVKMAGKPIRAIVG

2017. Deep-sea vent phage DNA polymerase specifically initiates DNA synthesis in the absence of primers. Mar 21;114(12):E2310-E2318. [PMID: 28265063](#)